

## AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions and listings of claims in the application.

1. (currently amended) A shape memory alloy, comprising

- (a) ~~an effective amount of~~ from about 20 % to about 30% Mn;
- (b) ~~an effective amount of~~ from about 5% to about 6% Si;
- (c) from about [1%] 2% to about [8%]-5% Cr;
- (d) ~~an effective amount of~~ from about 0.1% to about 0.2% N; and
- (e) [the] a balance of Fe[.];

wherein Ni and C are present in said alloy in insignificant trace amounts, and said shape memory alloy has essentially 100 percent shape recovery within no more than two training cycles given an application of up to 3 percent prestrain.

2. (cancelled)

3. (cancelled)

4. (cancelled)

5. (currently amended) A shape memory alloy of Claim [4] 1, comprising from about 5.5% to about 6% of Si.

6. (cancelled)

7. (currently amended) A shape memory alloy of Claim 1, comprising from about 0.1% to about [0.5%] 0.16% N.

8. (original) A shape memory alloy of Claim 1, comprising from about 55% to about 75% Fe.

9. (original) A shape memory alloy of Claim 8, comprising from about 61% to about 70% Fe.

10. (original) A shape memory alloy of Claim 1, wherein said alloy demonstrates about 100% shape recovery with one cycle of thermo-mechanical training with a prestrain of about 3%.

11. (currently amended) A shape memory alloy comprising:

- (a) from about 20% to about 30% of Mn;
- (b) from about 5.5% to about 6% of Si;
- (c) from about [1%] 2% to about [8%] 5% of Cr;
- (d) from about 0.1 % to about [0.5%] 0.16% N; and
- (e) from about 60% to about 70% Fe[.];

wherein Ni and C are present in said alloy in insignificant trace amounts, and said shape memory alloy has essentially 100 percent shape recovery within no more than two training cycles given an application of up to 3 percent prestrain.

12. (cancelled)

13. (cancelled)

14. (original) A shape memory alloy of Claim 11, wherein said alloy demonstrates about 100% shape recovery with one cycle of thermo-mechanical training with a prestrain of about 3%.

15. (original) A shape memory alloy of Claim 11, comprising about 20% Mn, about 5.5% Si, about 5% Cr, about 0.16% N, and the balance Fe.

16. (cancelled)

17. (original) A shape memory alloy of Claim 11, comprising about 30% Mn, about 6% Si, about 2% Cr, about 0.10% N, and the balance Fe.

18. (cancelled)

19. (currently amended) A shape memory alloy according to Claim [1] 18, consisting essentially of:

- (a) from about 20% to about 30% of Mn;
- (b) from about 5.5% to about 6% of Si;
- (c) from about 2% to about 5% of Cr;
- (d) from about 0.1 % to about [0.3%] 0.16% N; and
- (e) from about 61% to about 70% Fe.

20. (cancelled)

21. (cancelled)

22. (cancelled)

23. (cancelled)

24. (cancelled)

25. (cancelled)

26. (cancelled)

27. (cancelled)

28. (cancelled)

29. (cancelled)

30. (cancelled)

31. (cancelled)

32. (cancelled)

33. (cancelled)

34. (cancelled)

35. (cancelled)

36. (currently amended) A iron-manganese-silicon-based shape memory alloy having from about 20% to about 30% Mn, from about 5% to about 6% Si, from about 2% to about 5% Cr, from about 0.1% to about 0.2% N, insignificant trace amounts of Ni and C, and a balance of Fe, wherein said alloy is trained by the method of Claim 24.

(a) tensile deforming said alloy by applying from about 2.5% to about 4% prestrain at a temperature of from about 4°C to about 45° C;

(b) heating said alloy to a temperature of from about 500°C to about 700°C for at least about 2 minutes; and

(c) cooling said alloy.

37. (new) A shape memory alloy, comprising

- (a) from about 20 % to about 25% Mn;
- (b) from about 5% to about 5.5% Si;
- (c) about 5% Cr;
- (d) from about 0.1% to about 0.2% N; and
- (e) a balance of Fe;

wherein Ni and C are present in said alloy in insignificant trace amounts.

38. (new) A shape memory alloy according to Claims 37, comprising from about 0.13% to about 0.16% N.